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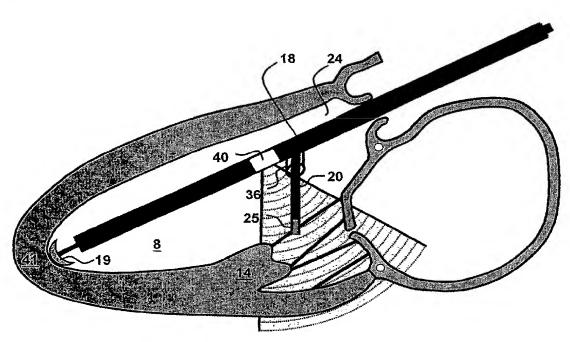
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(54) Title: CARDIAC DEVICES AND METHODS FOR MINIMALLY INVASIVE REPAIR OF ISCHEMIC MITRAL REGURGITATION



(57) Abstract: Novel apparatus and minimally invasive methods to treat atrioventricular valve regurgitation that is a result of tethering of chordae attaching atrioventricular valve leaflets to muscles of the heart, such as papillary muscles and muscles in the heart wall, thereby restricting the closure of the leaflets. Catheter embodiments for delivering and positioning chordal severing and elongating instruments are described.

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched			
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category *	Citation of document, with indication, where a	ppropriate, of the relevant passages	Relevant to claim No.
A,P	US2003/0120341 A1 (Shennib et al) 26 June 2003 (2		
Α	US 2002/0013571 A1 (Goldfarb et al) 31 January 2002 (31.01.2002), See entire document.		
A, E	US 6,629,534 B1 (St. Goar et al) 07 October 2003 (07.10.2003), See entire document.		
/1, <u>1</u>	03 0,029,334 B1 (3t. Goal et al) 07 October 2003 (07.10.2003), See entire document.		
Α	US 6,355,030 B1 (Aldrich et al) 12 March 2002 (12.03.2002), See entire document.		
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Eurthon	documents are listed in the continuation of Box C.	See retent femily owner	
		See patent family annex.	
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